

Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE: November 28, 2000
APPLICANT Weigl, et al.		GROUP: 1743

U.S. PATENT DOCUMENTS


Exmr Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
<i>JS</i>		5,389,523	2/14/95	Plant, et al.	33	543	

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes/No
OK		WO 95/27211	12.10.95	PCT	G01N 35	08	
GP		0 345 782 A2	13.12.89	EP	G01N 30	00	

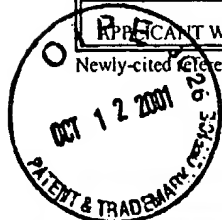
OTHER PRIOR ART (including Author, Title, Date, Pertinent Pages, etc.)

[illegible]

EXAMINER  DATE CONSIDERED 3-5-04

* **EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743



U.S. PATENT DOCUMENTS

Exmr. Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER PRIOR ART (including Author, Title, Date, Pertinent Pages, etc.)

			Manz, A. et al. "Electroosmotic Pumping and Electrophoretic Separations for Miniaturized Chemical Analysis System" (1994) <i>J. Micromech. Microeng.</i> , 4:257-265
			Miyake, R. et al. "A Development of Micro Sheath Flow Chamber" in <i>Proceedings of the IEEE Micro Electro Mechanical Systems Workshop</i> (1991) Nara, Japan, pp 265-270

EXAMINER	DATE CONSIDERED 3-5-01
----------	------------------------

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

12/20/89

RECEIVED

OCT 17 2001

TC 1700



Sheet 1 of 1

RECEIVED

Form PTO 1449

ATTY DOCKET NO. 6-96C

SERIAL NO. 09/724,308

FILING DATE November 28, 2000

JUN 22 2001

APPLICANT Weigl et al.

GROUP 1743

Newly-cited references

TC 1700

U.S. PATENT DOCUMENTS

Exmr. Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
<i>W</i>	6,159,739	12/12/00	Weigl et al.	436	52	
<i>W</i>	5,747,349	05/05/98	van den Engh et al.	436	172	

FOREIGN PATENT DOCUMENTS

Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER PRIOR ART (including Author, Title, Date, Pertinent Pages, etc.)

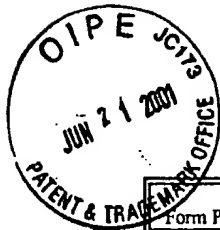
EXAMINER

W. J. S.

DATE CONSIDERED

3-5-04

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Sheet 1 of 6

Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

Previously cited references

RECEIVED
JUN 22 2001
TC 1706

U.S. PATENT DOCUMENTS

Exmr. Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
<i>Q</i>	3,449,938	06/17/69	Giddings	73	23	
	3,795,489	03/05/74	Warnick et al.	23	254 R	
	4,147,621	04/03/79	Giddings	210	22 C	
	4,214,981	07/29/80	Giddings	209	155	
	4,250,026	02/10/81	Giddings et al.	209	155	
	4,683,212	07/28/87	Uffenheimer	436	52	
	4,726,929	02/23/88	Gropper et al.	422	68	
	4,737,268	04/12/88	Giddings	209	12	
	4,756,884	07/12/88	Hillman et al.	422	73	
	4,830,756	05/16/89	Giddings	210	739	
	4,894,146	01/16/90	Giddings	209	12	
	4,908,112	03/13/90	Pace	204	299	
	5,007,732	04/16/91	Ohki et al.	356	73	
	5,039,426	08/13/91	Giddings	210	695	
	5,141,651	08/25/92	Giddings	210	748	
	5,156,039	10/20/92	Giddings	73	1 R	
	5,193,688	03/16/93	Giddings	209	155	
	5,240,618	08/31/93	Caldwell et al.	210	748	
	5,250,263	10/05/93	Manz	422	81	
	5,288,463	02/22/94	Chemelli	422	58	
	5,304,487	04/19/94	Wilding et al.	435	291	
	5,322,626	06/21/94	Frank et al.	210	634	
	5,389,524	02/14/95	Larsen et al.	435	29	
<i>Q</i>	5,465,849	11/14/95	Wada et al.	209	214	

Q. B.

3-5-04



Sheet 2 of 6

Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

Previously cited references

RECEIVED
JUN 22 2001
TC 1700

<i>20</i>	5,480,614	01/02/96	Kamahori	422	70	
	5,599,432	02/04/97	Manz et al.	204	451	
	5,599,503	02/04/97	Manz et al.	422	82.05	
	5,637,469	06/10/97	Wilding et al.	435	7.21	
	5,635,358	06/03/97	Wilding et al.	435	7.2	
	5,498,392	03/12/96	Wilding et al.	422	68.1	
	5,549,819	08/27/96	Nickerson	210	511	
	5,534,328	07/09/96	Ashmead et al.	210	97	
	5,554,339	09/10/96	Cozzette et al.	422	69	
	5,571,410	11/05/96	Swedberg et al.	422	69	
	5,585,011	12/17/96	Saaski et al.	216	56	
	5,585,069	12/17/96	Zanzucchi et al.	422	100	
	5,587,128	12/24/96	Wilding et al.	435	287.3	
	5,603,351	02/18/97	Cherukuri et al.	137	597	
	5,605,662	02/25/97	Heller et al.	422	69	
	5,618,432	04/08/97	Rewitzer et al.	210	634	
	5,632,957	05/27/97	Heller et al.	422	69	
	5,639,423	06/17/97	Northrup et al	435	287.3	
	5,674,743	10/07/97	Ulmer	435	287.2	
	5,681,484	10/28/97	Zanzucchi et al.	216	56	
	5,707,799	01/13/98	Hansmann et al.	435	6	
	5,716,852	02/10/98	Yager et al.	436	172	
<i>20</i>	5,726,751	03/10/98	Altendorf et al.	356	246	

J. S. 3-5-04



Sheet 3 of 6

Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

Previously cited references

<i>JS</i>	5,842,787	12/01/98	Kipf-Sill et al.	366	340	
<i>I</i>	5,869,004	02/09/99	Parce et al.	422	100	
<i>I</i>	5,932,100	08/03/99	Yager et al.	210	634	
<i>I</i>	5,961,832	10/05/99	Shaw et al.	210	85	
<i>JS</i>	5,971,158	10/26/99	Yager et al.	209	155	

RECEIVED
JUN 22 2001
TC 170

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation Yes/No
<i>JS</i>	WO 97/02357	23.01.97	PCT	C12P 19/34		
<i>I</i>	WO97/00125	03.01.97	PCT	B01F 5/06		
	WO96/15576	23.05.96	PCT	H92K 44/02		
	WO96/12541	02.05.96	PCT	B01D 11/04		
	WO96/12540	02/05/96	PCT	B01D 11/04		
	WO96/04547	15.02.96	PCT	G01N 27/00		
	WO93/22421	11.11.93	PCT	C12M 3/00		
	WO93/22058	11.11.93	PCT	B01L 7/00		
	WO93/22055	11.11.93	PCT	B01L 3/00		
	WO93/22054	11.11.93	PCT	B01L 3/00		
	WO93/22053	11.11.93	PCT	B01L 3/00		
	0 294 701 B1	14.12.88	EP	G01N 15/14		
	0 381 501 A2	08.08.90	EP	B01L 3/00		
<i>JS</i>	0 645 169 A1	29.03.95	EP	B01D 21/00		

JS 3-5-04



Sheet 4 of 6

Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

Previously cited references

OTHER PRIOR ART (including Author, Title, Date, Pertinent Pages, etc.)

Is		Afromowitz, M.A. and Samaras, J.E., (1989), "Pinch Field-Flow Fractionation Using Flow Injections Techniques," <i>Separation Science and Technology</i> 24(5&6):325-339
		Brody, J.P. and Yager, P. (June 1996), "Low Reynolds Number Micro-Fluidic Device," <i>Solid State Sensor & Actuator Workshop, Hilton Head, SC, June 2-6</i> , pp. 105-108
		Chmelik et al., (1991), "Isoelectric focusing field-flow fractionation," <i>J. Chromatography</i> 545(2):349-358
		Elwenspoek et al., (Dec 1994), Towards, Integrated Microliquid Handling Systems," <i>J. Micromech. Microeng.</i> 4:227-245
		Faucheux, L.P. et al. (Feb 1995), "Optical Thermal Ratchet," <i>Phys. Rev. Letters</i> 74:1504-1507
		Forster et al., (Nov 1995), "Design, Fabrication and Testing of Fixed-Valve Micro-Pumps," <i>Proceeding of the ASME Fluids Engineering Division, ASME. FED</i> 235:39-44
		Fu et al., (1993), "Rapid Diffusion Coefficient Measurements Using Analytical SPLITT Franctionation: Application to Proteins," <i>Anal. Biochem.</i> 208:80-87
		Gravesen et al., (1993), "Microfluidics - a review," <i>J. Micromechanics and Microengineering</i> 3:168-182
		Giddings, J.C., (1988), "Continuous Separation in Split-Flow Thin (SPLITT) Cells: Potential Applications to Biological Materials," <i>Sep. Sci. Technol.</i> 23(8,9):931-943
		Giddings, J.C. (1985), "Optimized Field-Flow Fractionation System Based on Dual Stream Splitters," <i>Anal. Chem.</i> 57:945-947
		Giddings, J.C. et al. (1983), "Outlet Stream Splitting for Sample Concentration in Field-Flow Fractionation," <i>Separation Science & Technology</i> 18:293-306
		Giddings, J.C. (June 1993), "Field-Flow Fractionation: Analysis of Macromolecular, Colloidal and Particulate Materials," <i>Science</i> 260:1456-1465
		Harrison et al., (Aug 1993), "Micromachining a miniaturized capillary electrophoresis-based chemical analysis system on a chip," <i>Science</i> 261:895-897
		Kittilsand, G. and Stemme, G., (1990), "A Sub-micron Particle Filter in Silicon," <i>Sensors and Actuators A21-A23</i> :904-907
Is		Leff, H.S. and Rex, A.F. (Mar 1990), "Resource letter MD-1: Maxwell's demon," <i>Am. J. Physics</i> 58:201-209

RECEIVED

JUN 22 2001

TC 1700

J. S.

3-5-04



Sheet 5 of 6

Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

Previously cited references

Or		Levin, S. and Tawil, G., (Sept 1993), "Analytical SPLIT Fractionation in the Diffusion Mode Operating as a Dialysis-like system Devoid of Membrane. Application to Drug-Carrying Liposomes," <i>Anal. Chem.</i> 65:2254-2261
		Manz, A. et al. (1993), "Planar Chips technology for miniaturization of separation systems: A developing perspective in chemical monitoring," <i>Advances in Chromatography</i> 33:1-66
		Petersen, K.E. (May 1982), "Silicon as a Mechanical Material," <i>Proc. IEEE</i> 70(5):420-457
		Ramsey et al., (Oct 1995), "Microfabricated chemical measurement systems," <i>Nature Medicine</i> 1(10):1093-1096
		Reisman, A. et al. (1979) "The Controlled Etching of Silicon in Catalyzed Ethylenediamine-Pyrocatechol-Water Solutions," <i>J. Electrochem. Soc.</i> 126:1406-1415
		Rousselet, J. et al. (Aug 1994), "Directional motion of brownian particles induced by a periodic asymmetric potential," <i>Nature</i> 370:446-448
		Shoji, S. and Esashi, M. (Dec 1994), "Microflow devices and systems," <i>J. Micromechanics and Microengineering</i> 4:157-171
		Springston et al., (1987), "Continuous Particle Fractionation Based on Gravitational Sedimentation in Split-Flow Analytical Chemistry," <i>Analytical Chemistry</i> 59:344-350
		Verpoorte et al., (Dec 1994), "Three-dimensional micro flow manifolds for miniaturized chemical analysis systems," <i>J. Micromech. Microeng.</i> 4:246-256
		Wallis, G. and Pomerantz, D.I. (Sept 1969) "Field Assisted Glass-Metal Sealing," <i>J. Appl. Physics</i> 40:3946-3949
		Weigl, B.H. and Yager, P. (Apr 1996), "Silicon-Microfabricated Diffusion-Based Optical Chemical Sensor," presented at Europtrode Conference, Zurich, Switzerland, April 2-3
		Weigl, B.H. et al. (Feb 1997), "Fluorescence and absorbance analyte sensing in whole blood and plasma based on diffusion separation in silicon-microfabricated flow structures," SPIE Proceedings, J. Lakowitz (ed.), <i>Fluorescence Sensing Technology III</i> (Feb. 9-11)
		Weigl, B.H. et al. (Nov 1996), "Diffusion-Based Optical Chemical Detection in Silicon Flow Structures," <i>Analytical Methods & Instrumentation Special Issue μTAS 96</i> , pp. 174-184
Or		Weigl, B.H. et al. (Nov 1996), "Rapid sequential chemical analysis in microfabricated flow structures using multiple fluorescent reporter beads," <i>μTAS 96</i> (Nov' 96)

RECEIVED

JUN 22 2001

TC 1700

J.D. 3-5-04



Sheet 6 of 6

Form PTO 1449		
ATTY DOCKET NO. 6-96C	SERIAL NO. 09/724,308	FILING DATE November 28, 2000
APPLICANT Weigl et al.		GROUP 1743

RECEIVED

JUN 22 2001

TC 1700

Previously cited references

W		Wilding et al., (Jan 1994), "Manipulation and Flow of Biological Fluids in Straight Channels Micromachined in Silicon," <i>J. Clin. Chem.</i> 40(1):43-47
W		Williams, P.S. et al. (1992), "Continuous SPLITT Fractionation Based on a Diffusion Mechanism," <i>Ind. Eng. Chem. Res.</i> 31:2172-2181
Y		Yue et al., (Sept 1994), "Miniature Field-Flow Fractionation Systems for Analysis of Blood Cells," <i>Clin. Chem.</i> 40:1810-1814

EXAMINER

J. S. [Signature]

DATE CONSIDERED

3-5-04

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

12/20/89